

## **REMARKS**

### **I. Status Of The Claims And The Rejections**

Claims 1–10 and 12–15 are pending in the application. Claims 9, 10, and 12 stand rejected under 35 U.S.C. § 101, based on the assertion that they are not supported by either a specific and substantial utility or a well established utility (see Office Action, page 2, ¶3) and that the asserted utility is not credible (see Office Action, page 5, Response to Arguments). Additionally, claims 9, 10, and 12 stand rejected under §112, first paragraph. (See Office Action page 2, ¶3.) The Office Action alleges that one skilled in the art would not know how to use the claimed invention. (See Office Action, page 2, ¶3.) Claim 11 is cancelled making the rejections of this claim moot.

Claims 1–10 and 12–15 stand rejected under 35 U.S.C. § 103(a) for alleged obviousness based on CN ZL94113646.9 to Wenhao ("Wenhao '646.9") in view of U.S. Patent No. 5,985,153 to Dolan et al. ("Dolan '153"). Applicant respectfully traverses the rejections and respectfully requests reconsideration of the claims.

### **II. Rejections under 35 U.S.C. §101**

Contrary to the assertion in the Office Action, claims 9, 10, and 12 comply with Section 101. In addition to the data provided in the specification in Example 4, which demonstrates the change in size of the molecule clusters; in Example 5, which demonstrates the property changes of the treated fuel, and in Example 6, which demonstrates the effects of fuel saving and discharge reduction by using the fuel (see pages 7–13), Applicant provides a Declaration that is evidence that the utility is specific

and substantial. See Declaration of Yuwen Huang, page 2, ¶¶8–11. Referring to this Declaration, in pertinent part, "the claimed method is useful for treating fuels used in combustion" and "fuels treated accordingly exhibit improved properties over prior art fuels, and the specification is credible in asserting this conclusion."

Applicant also submits evidence that the asserted utility is credible. See Declaration of Yuwen Huang, pages 2–3, ¶¶12–18 and ¶25. Specifically addressing the interpretation of the SANS data in the Office Action, Applicant submits evidence (1) that molecular clusters in fuel oil may be measured with SANS; (2) that the SANS data described in Applicant's specification, specifically in Fig. 3, is consistent with data provided by SANS; (3) that the data was provided by the Center for Neutron Research National Institute of Standards and Technology; (4) that the measurements of untreated fuel oil (from a Crown Service Station in Gaithersburg, Maryland) indicate that the untreated fuel oil contains molecular clusters that are larger than about 310 nm; (5) that according to the SANS data, the treated fuel oil samples shown in FIG. 3 do not contain granules larger than 3 nm; and (6) that SANS is not sensitive to impurities.

Applicant additionally notes that any rejection based on lack of utility should include a detailed explanation as to why the claimed invention has no specific and substantial utility. Whenever possible, the Office Action should provide documentary evidence to support the factual basis for the rejection. If documentary evidence is not available, a specific explanation should be set out in the Office Action providing the scientific basis for the factual conclusions. (See M.P.E.P. §2107 II.) Applicant notes that the record is devoid of documentary evidence or a detailed explanation along scientific bases that would support the rejections. Lastly, Patent Office personnel must treat as true

a statement of fact made by an applicant in relation to an asserted utility. Id. In that regard, please see Applicant's Response and Amendment dated March 12, 2009, Section II, which includes such a statement. For at least these reasons, Applicant respectfully requests that the Section 101 rejections of claims 9, 10, and 12 be withdrawn.

III. Rejections Under § 112

Claims 9, 10, and 12 are sufficiently enabled by the specification. Applicant submits evidence in the form of a Declaration that one of ordinary skill in the art would know how to make and use the claimed invention. See Declaration of Yuwen Huang, page 2, ¶7. Applicant requests withdrawal of the rejections.

IV. Rejections under 35 U.S.C. §103(a)

Claims 1–10 and 12–15 are nonobvious over Wenhao '646.9 in view of Dolan '153. In the rejection, and presumably with regard to claims 9, 10, and 12–15, the Office Action correctly admits that Wenhao '646.9 does not teach a gap of less than 0.5 mm. It is stated in the Office Action, however, that it would have been obvious to one of ordinary skill in the art to use a gap that is less than 0.5 mm. It is also stated in the Office Action that one of ordinary skill in the art would expect that a gap that is smaller would produce a larger air gap magnetic field. The stated conclusion based on this rationale is that the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art. (See Office Action at page 3, ¶5.)

Applicant submits evidence that the rationale upon which the rejections are based is incorrect. See Declaration of Yuwen Huang at page 3, ¶19, to page 5, ¶30, and

Declaration of Wenhao Wang at page 2, ¶¶4–11. In particular, Applicant submits that the stated rationale is not factually supported by the references nor is it factually supported generally. Specifically, a smaller gap does not produce a stronger field. See Declaration of Yuwen Huang, page 5, ¶26. The evidence indicates that "when two bar magnets are positioned in opposition to one another, the number of field lines remains the same, but they become compressed." (Emphasis added.) Id. Consequently, the facts do not support the rationale set forth in the Office Action. The Office Action therefore fails to provide a *prima facie* obviousness rejection. Applicant requests withdrawal of the rejections.

The Office Action provides further analysis that is similarly unsupported. It is correctly stated in the Office Action that Wenhao '646.9 does not appear to explicitly teach a magnetic field gradient of at least 1.5 Tesla/cm in a direction intersecting with the magnetic force lines of a magnetic field intensity of at least 8,000 Gauss, as claimed. (See Office Action page 3, ¶5.) The Office Action alleges that Dolan '153 provides the missing subject matter. The stated reasoning for combining Wenhao '646.9 with Dolan '153 is that it would have been obvious to one of ordinary skill in the art to apply the magnetic field gradient of Dolan'153 in the magnetic field cavity of Wenhao '646.9 because Dolan '153 allegedly teaches that an internal magnetic field may remove weakly magnetic materials from slurries. (See Office Action page 4, ¶5.)

Applicant again submits evidence that the rationale upon which the rejections are based is incorrect. Applicant submits evidence that Wenhao '646.9 does not describe the magnetic field gradient between the two magnets, does not suggest modification of the magnetic field gradient, and specifically does not suggest a magnetic field gradient of at least 1.5 Tesla/cm. See Declaration of Yuwen Huang, page 5, ¶22.

Dolan '153 describes, in part, increasing the field gradient to improve separation of magnetically responsive particles, but Dolan '153 does not describe any effects of a magnetic field or a magnetic field gradient on the properties of fuel. *Id.* at page 4, ¶23 and ¶24. Consequently, one of ordinary skill in the art would not combine Wenhao '646.9 with Dolan '153 to arrive at the claimed invention. *Id.* at page 4, ¶30.

In addition, Applicant provides evidence in the form of a Declaration that provides that fuel treated according to the claimed method produced results, which to one of ordinary skill in the art at the time of the invention, were unexpected. See Declaration of Wenhao Wang, page 2, ¶¶4–11. The device in Wenhao '646.9 was tested in 1996 by the Chinese Research Academy of Environmental Sciences according to the substantially the same procedure described in the present application. *Id.* at ¶7. (The testing data is included in Exhibit A, which contains the results in Chinese and in an English translation.) According to the data provided in the Declaration, which is supported by Exhibit A, the rate of fuel saving increased from 6.0% for the Wenhao '646.9 device to 30.4% according to the claimed method. *Id.* at ¶¶9–11. Furthermore, the CO discharge reduction improved from 26.1% to at least 35%. *Id.* Both the improvement in the rate of fuel saving and the improvement in CO reduction were unexpected. *Id.*

It is stated in the Office Action with regard to claims 1–8 and 13–15 that Wenhao '646.9 does not seem to explicitly state the size of the gasoline particles in the dual-cavity magnetized fuel saver. (See Office Action bottom of page 4 to the top of page 5.) However, the Office Action indicates that these claims are obvious because the same process should yield the same product.

The rejection is factually and rationally unsupported. Each of claims 2-8 depends directly or indirectly from claim 1. Therefore each of these claims includes the features of claim 1 in combination with one or more additional features. Claims 13-15 depend from claim 9. As set forth above, Applicant submits evidence that the method is not the same because the results of the claimed method were unexpected at the time of the invention. See Declaration of Wenhao Wang at pages 2-3, ¶11. Applicant respectfully submits that each of these claims is patentable for at least this reason. Applicant respectfully requests that this rejection be withdrawn.

V. Conclusion

Based on these remarks, Applicant respectfully asserts that this case is in condition for allowance and respectfully requests allowance of the pending claims.

Applicant respectfully asserts that this response is timely filed within the two-month period, and that no fee is due. If any charges or credits are necessary to complete this communication, please apply them to Deposit Account No. 23-3000.

Respectfully submitted,

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